2017-03

Informing Future Ship Design Projects Panel

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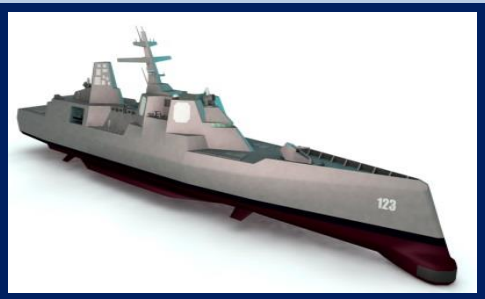

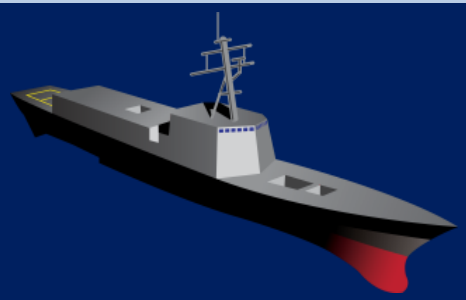

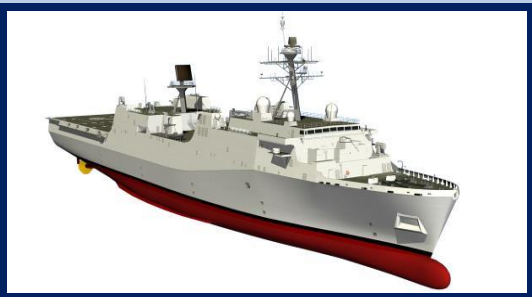

Moderator: Glen Sturtevant, PEO Ships Director for Science and Technology

Panelists:

Persistent Platforms-The DDG 51 Case
- Dr. Ira Lewis, NPS

Applying Principles of Set-Based Design to Improve Ship Acquisition
- Dr. Eric Rebentisch, MIT

Flexible and Adaptable Ship Options: Assessing the Future Value of Incorporating Flexible Ships Design Features Into New Navy Ship Concepts
- Dr. Johnathan Mun, NPS

Ship Evolutions

Cruisers - Destroyers

DD 963 SPRUANCE
1975

CG 47 TICONDEROGA
1983

DDG 51 ARLEIGH BURKE
1991

DDG 1000 ZUMWALT
2016

Amphibious Ships

LPH 2 IWO JIMA
1961

LHA 1 TARAWA
1976

LHA 6 AMERICA
2014

LPD 4 AUSTIN
1965

LHD 1 WASP
1989

LPD 17 SAN ANTONIO
2006

LSD 36 ANCHORAGE
1969

LSD 49 HARPERS FERRY
1995

LX(R)

Challenges Facing Surface Navy

- Rapidly Evolving Threats and Missions
- Accelerating Pace of Technological Change
- Increasing Costs
- Readiness

Imperative for Change

- Ships are costly to build and sustain
  - Current cost estimating methods result in minimal displacement ship designs
  - Warfighting capabilities are derived from complex systems
  - Ships are densely packed
  - Ship density is directly proportional to ship design, construction and sustainment costs
- Payloads (capabilities) are strongly coupled to platforms (ships)
- Legacy ship designs have limited allowance margins for modernization
- Closed and inflexible architectures result in lengthy and costly upgrades to ships
- Ships need to stay combat relevant over their *entire* service life or become irrelevant